

Melvin Butte Forest Management Project

Silviculture Treatment Specifications and Implementation Guidelines

Setting ID (stands) 06010505380011278, 06010505380011286, 06010505380011753, 06010505380011757,
06010505380011759, 06010505380011760
EA Unit #29
Stewardship Imp Units 1,2,3,9,13,14, 38
Updated 10/14/2016

Management Allocations:

LRMP: Front Country Seen/Unseen MA 18

NWFP: Matrix

EA Treatment Name: Thinning (Un-evenaged), or plantation (Unit 38)

Secondary treatments: Underburn (prescribed), pile burning, mastication, pruning

Site Description:

Unit	Acres	Aspect	Slope	Site Index (PIPO)	Plant Assoc. (Volland 1982)
1	7	E	0-5	87	CWS112
2	47	N-NE	0-5	87	CWS112
3	6	NE	0-5	87	CWS112
9	8	E	0-20	84	CPS213
13	25	NE	0-35 (minor inclusions at ~35)	84	CPS213
14	16	SE	0-10	84	CPS213
38	18	E	0-5	87	CWS112

Structure:

The structure of the stands in the units are in the stem exclusion closed canopy phase. Understory shrub component is low as the crown has closed and reduced the manzanita.

Dwarf Mistletoe

The units contain low to high levels of dwarf mistletoe. Most often the infections are in the bottom ½ to 1/3rd of the crown. Mistletoe infections may be higher in those trees left from previous stand entry or where infections have spread from these to higher in the crowns of planted trees. The boundaries of the units have some of the highest levels due to the adjacency of infected stands.

Past management-

The stands had overstory removal with replanting of ponderosa pine occurring in rows. The past OSR removed ~60-100ft² basal area per acre (BA/acre) of ponderosa pine. The OSR appears to have been designed to remove levels of mistletoe in the stands. The stands were pre-commercially thinned ~30 years ago. Fire suppression of natural and/or human ignitions has occurred from early in the 20th century.

Replanting of ponderosa pine occurred on a regular spacing and in rows at approximately ~25x25ft spacing. Any grand fir (>12"dbh) that are present are randomly distributed across the units and occur at about 1-2 per acre. Spacing of trees within 20ft are not common and are likely the result of ingrowth or missed as part of the past pre-commercial thin.

Existing condition-**Table 1-Stand statistics derived from Lidar determined tree points.**

Unit	Acres	Avg. DBH (BA adj)	Non-saw		Saw		BA/total	Non-saw		Saw	
			BA/acre 0-4.9"	BA/acre 5-8.9"	BA/acre 9-20.9"	BA/acre 21"+		TPA 0- 4.9"	TPA 5-8.9"	TPA 9- 20.9"	TPA 21"+
1	7	7.6	5	58	45	0	108	57	211	75	0
2	47	7.0	7	46	31	0	84	90	175	50	0
3	6	6.6	8	41	19	4	72	108	166	30	1
9	8	7.4	7	42	36	8	93	95	160	52	3
13	25	8.0	6	37	61	1	105	86	139	75	0
14	16	8.1	6	34	65	9	114	101	124	90	3
38	18	6.1	11	42	14	1	68	139	179	17	0

Conifer heights – ~20-50ft; diameters- range from 0-20" except may be larger on white/grand fir; ages- range from 40-60 years old.

Desired Future Condition-

Residual trees with little to no dwarf mistletoe and/or highly mistletoe trees being isolated/confined and/or mistletoe allocated to bottom 1/3rd of crown to allow for future pruning. Units with a random distribution of trees indicated by clumps and gaps.

Goals of the mark

- Reduce dwarf mistletoe abundance and potential spread within the unit. Remove where possible else isolate and confine dwarf mistletoe in the unit by spacing leave trees.
- Create, retain or induce trees in clumps or in a random distribution of stems. Induce variability into the stands.
- Increase mean stem diameter within the stand by thinning from below

Commercial Thin

Commercial thinning should strive for the following densities and distribution:

- 1) Larger grand firs that stand out from the rest of the unit will be reduced to 1 tree per 10 acres (about 1/acre currently).
- 2) Retained basal areas will vary within the unit from 20-100 sqft BA/ac using table 2 for a guide. Ranges may vary from below this is used as a guide. 60BA represents the lower level of the management zone. This table is used in order to induce clumps and small gaps into the units.

Table 2: Basal Area Variability- Prescribed acres at each basal area

Percent area of Units	Basal Area (sqft)	Unit 1 acres	Unit 2 acres	Unit 3 acres	Unit 9 acres	Unit13 acres	Unit14 acres
10%	20-40	1	5	1	1	3	2
15%	50	1	7	1	1	4	2

50%	60	3	24	3	4	12	8
15%	70	1	7	1	1	4	2
10%	80-100	1	5	1	1	3	2
Totals		7	47	6	8	25	16

- 3) Co-locate placement of low density areas with current high mistletoe presence (primarily in the upper 1/3rd of crown).
- 4) Utilize north aspects and other microsites for areas of higher density areas.
- 5) When choosing whether to leave a mistletoe tree, ensure its infection is NOT in the upper 1/3rd of the crown. Crowns may be pruned in a later step to further reduce spread within the stand.
- 6) Utilize any clumping that may be present. This may be difficult given the evenly spaced trees that are present. Generally, trees that are within 20ft should be considered as a clump.
- 7) No marking of ponderosa pine trees >20.9 or those that indicate old growth. Use Van Pelt guide for old growth description.
- 8) When encountering mature ponderosa that may be >21" dbh and has a DMR rating of 3+; reduce the understory around infected trees to an area equal to twice the drip-line of the crown(s).
- 9) Ponderosa pine thinning will be generally from below unless thinning is done to "isolate and confine" mistletoe. Only choose a larger tree over a small one in order to create clumpy structure or reduce any dwarf mistletoe that may be present.

Unit 1 Specific Information- The Pole Creek Fire burned within this unit causing pockets of mixed mortality. About 10 trees per acre are dead from fire effects.

- 1) The unit contains dead trees within striking distance from the 16rd, mark these dead trees for removal. Through remainder of unit retain at least 2 of the largest snags per acre. Ignore dead trees in basal area ranges. As a result of ignoring dead trees the lower 20-40 sqft BA ranges in specific areas may already be met and green trees will not be marked.

Non-saw/biomass/ pre-commercial/chip thinning component (trees <9" dbh)

The non-saw/ pre-commercial/ biomass utilization prescription is recommended where the small trees to be cut are not saw log sized material. The objective is to reduce inter-tree competition, ladder fuels and mistletoe abundance while promoting horizontal and vertical diversification and future recruitment/replacement.

Selection of Leave Trees- Retain conifers on a 20' spacing varying up to 50% to facilitate variable spacing and removal of dwarf mistletoe infected ponderosa pine.

Post-sale pruning

Leave trees that are left in the units may be pruned to reduce further spread into the stand. Pruning may occur up to 2/3rd of the live crown. Leave trees with more than 75% infestation may be girdled or pruned entirely for snag creation.

Prescribed Fire

These units have already had leave tree designation and thinned to desired silvicultural objectives- as such prescribed fire objectives will be utilized to reduce duff and needle cast and secondarily for snag creation. Inducing high mortality into leave trees is not an objective.

Size Class		Acceptable Mortality (%)
Name	DBH Range	Second Growth Stands/Trees
Seedling/Sapling	<5"	0 – 20
Pole	5" - 8"	0 – 20
Small 1	8" - 15"	0 – 5
Small 2	15" - 21"	0 – 5
Medium/Large	21"+	0 – 2

Certified silviculturist: __Will Brendecke____updated 10/14/2016_____